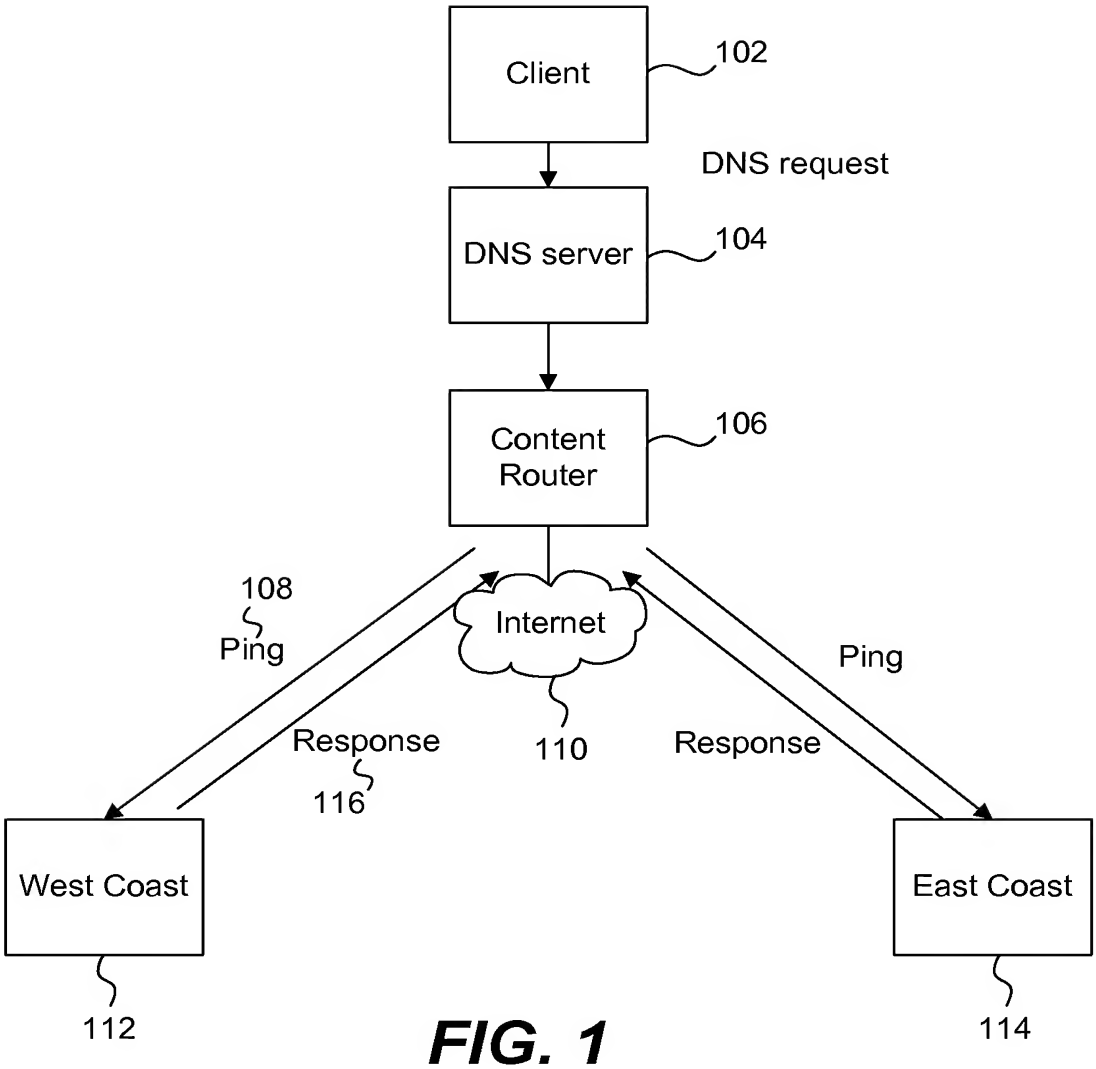

FIG. 1

Prior Art

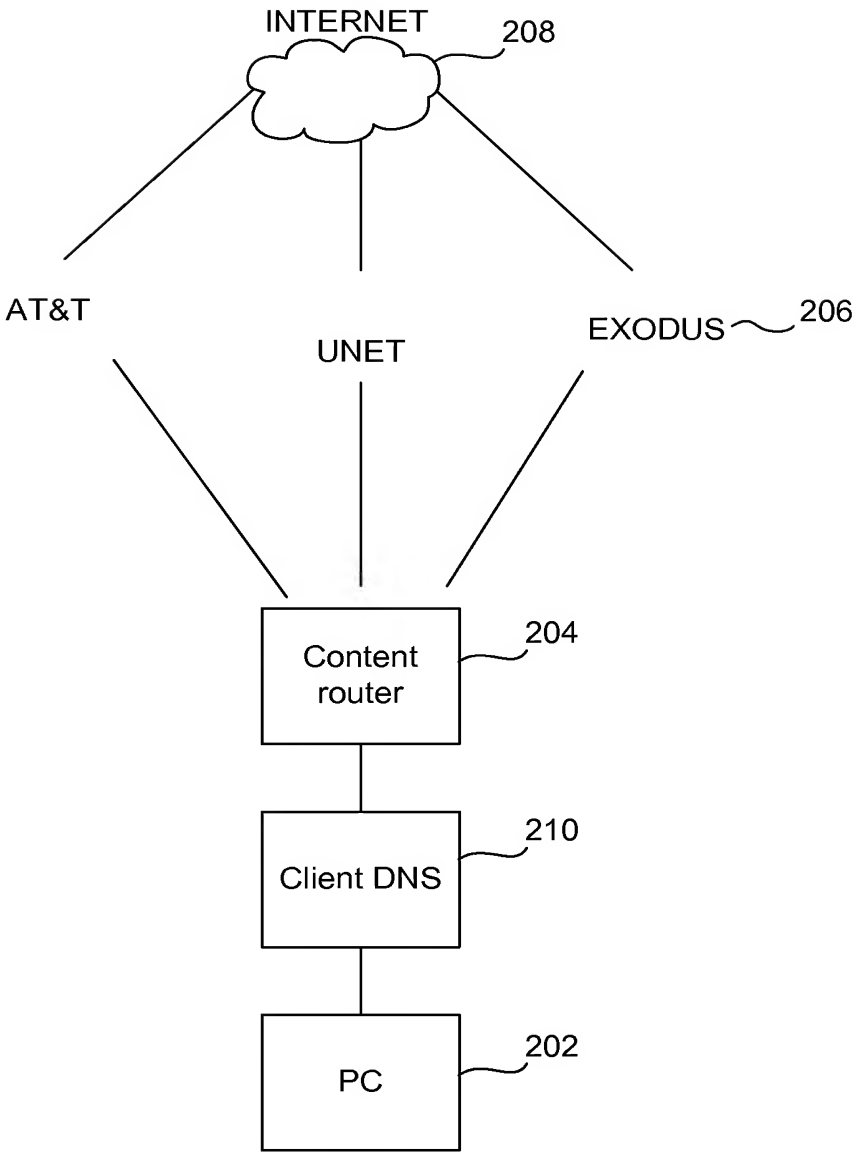
INTERNET
208
AT&T
UNET
EXODUS
206
Content router
204
Client DNS
210
PC
202

FIG. 2

Content router configuration – DNS mode

A-records 302

306	304	308
IP address1	Domain name1	Type of service1
IP address2	Domain name2	Type of service2

FIG. 3

TCP packet

502	504	506
Sequence number	Acknowledgement number	Acknowledgement flag
Synchronize flag	Reserved (type of service)	

508 510

FIG. 5

Mapping – TCP mode

704	702
IP address1	Type of service1
IP address2	Type of service2

FIG. 7

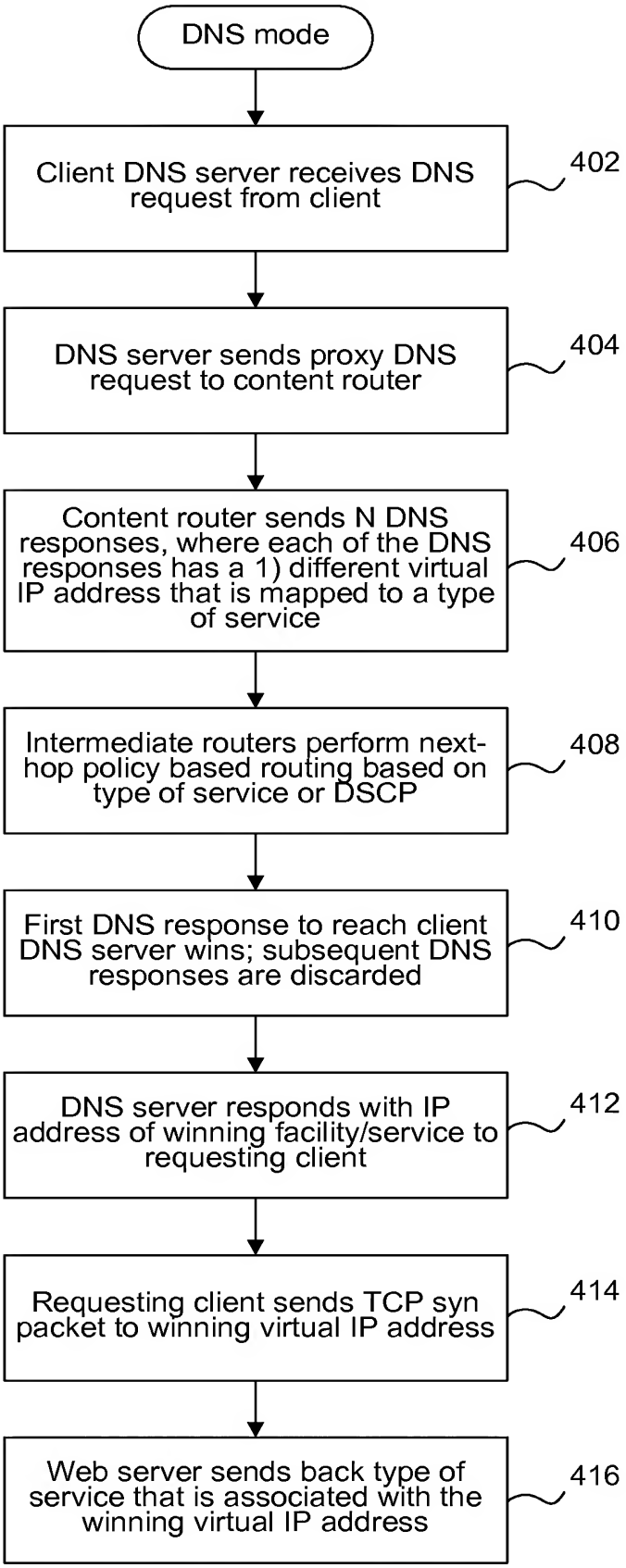
DNS mode
Client DNS server receives DNS request from client
402
DNS server sends proxy DNS request to content router
404
Content router sends N DNS responses, where each of the DNS responses has a 1) different virtual IP address that is mapped to a type of service
406
Intermediate routers perform next-hop policy based routing based on type of service or DSCP
408
First DNS response to reach client DNS server wins; subsequent DNS responses are discarded
410
DNS server responds with IP address of winning facility/service to requesting client
412
Requesting client sends TCP syn packet to winning virtual IP address
414
Web server sends back type of service that is associated with the winning virtual IP address
416

FIG. 4

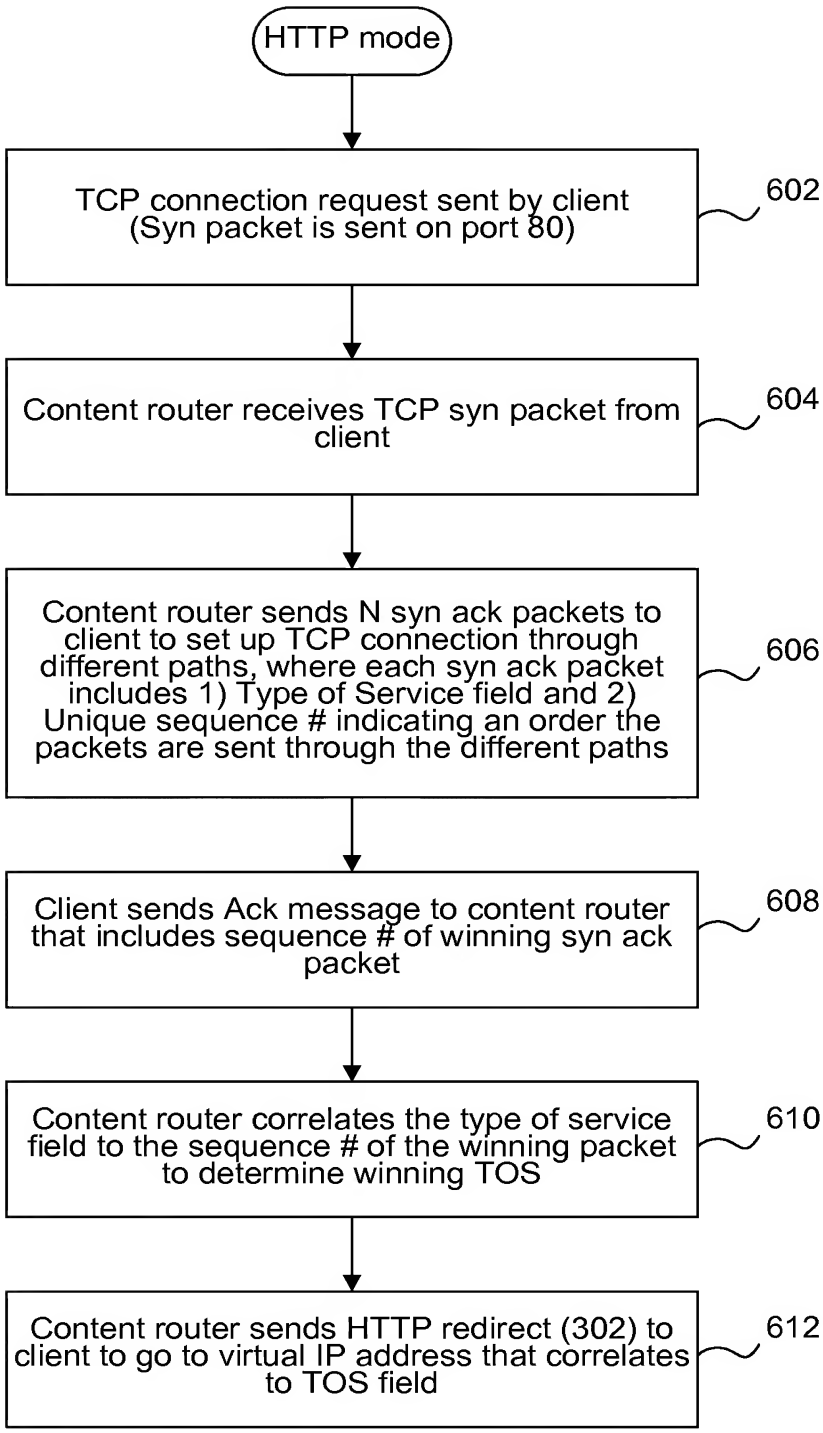
HTTP mode
TCP connection request sent by client (Syn packet is sent on port 80)
602
Content router receives TCP syn packet from client
604
Content router sends N syn ack packets to client to set up TCP connection through different paths, where each syn ack packet includes 1) Type of Service field and 2) Unique sequence # indicating an order the packets are sent through the different paths
606
Client sends Ack message to content router that includes sequence # of winning syn ack packet
608
Content router correlates the type of service field to the sequence # of the winning packet to determine winning TOS
610
Content router sends HTTP redirect (302) to client to go to virtual IP address that correlates to TOS field
612

FIG. 6

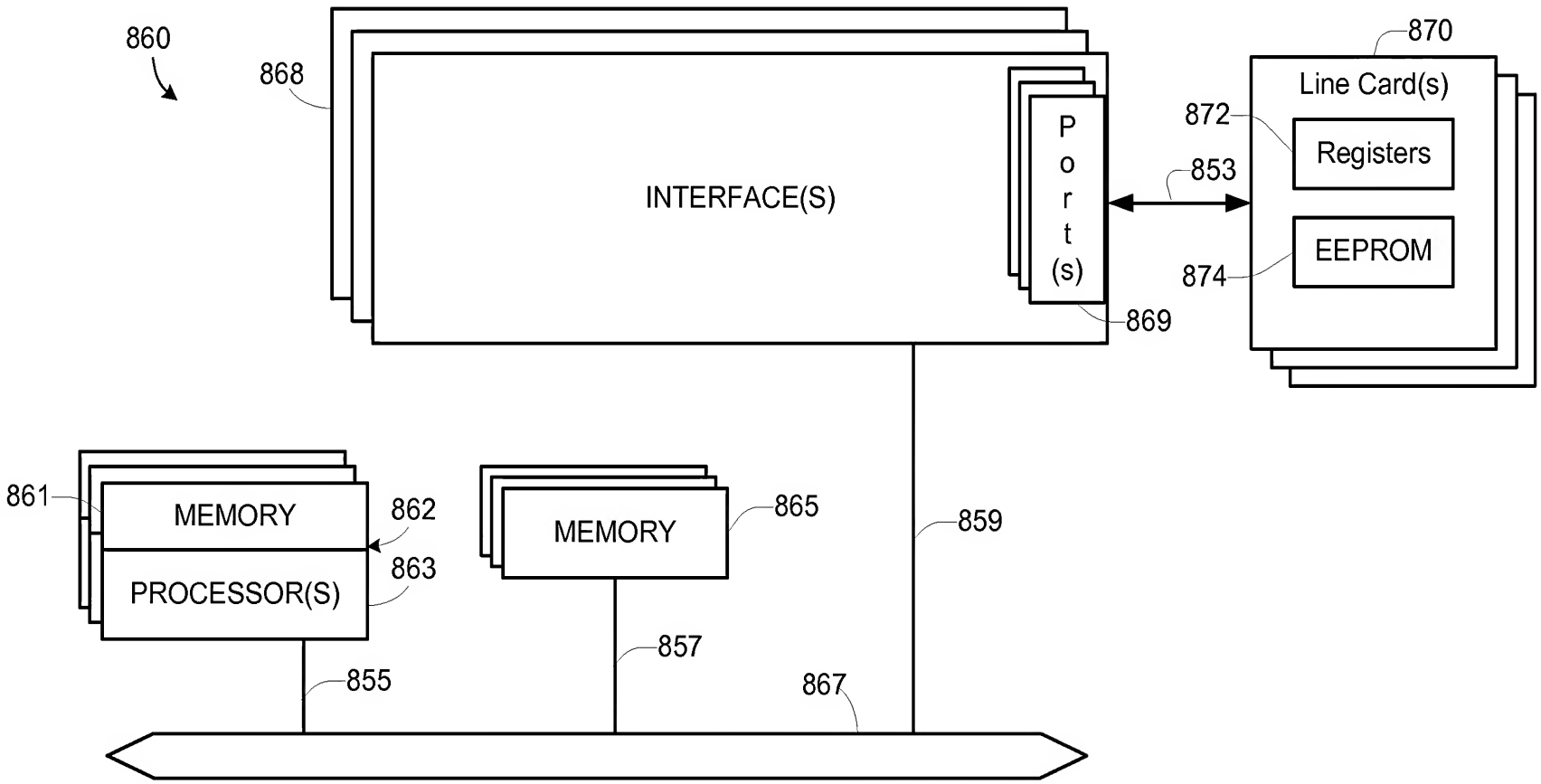
860
868
INTERFACE(S)
P
o
r
t
(s)
869
870
Line Card(s)
872
Registers
853
EEPROM
874
861
MEMORY
862
PROCESSOR(S)
863
MEMORY
865
859
857
855
867

FIG. 8